FINAL DETERMINATION OF COMPLIANCE
ENGINEERING EVALUATION OF APPLICATION NO. 2686
GILROY ENERGY CENTER LM6000 PHASE I PROJECT
PLANT #11180

Background:

Gilroy Energy Center LLC (GEC) is proposing to construct a 135-megawatt peaking power plant. The facility will consist of three simple-cycle, gas-fired combustion turbine and will be located at the Calpine Gilroy Power Plant, Gilroy, Santa Clara County, California.

Facility Description (Location, Industry, and Ownership):

The Gilroy Energy Center LM6000 project site is located on Pacheco Pass Highway, east of Highway 101, adjacent to Gilroy Foods. The existing 120 MW combined cycle cogeneration plant generates electricity and supplies steam to Gilroy Foods for use in its manufacturing processes.

The Gilroy Energy Center LM6000 project will generate electricity for sale into the electrical grid. The 135-megawatt peaking facility will be dispatched under contract with the California Independent System Operator (ISO). This plant will supply electricity during times of peak summer and winter demand.

Project Description:

This project is the first phase of the Gilroy Energy Center LM6000 project expansion, which may ultimately be a peaking power plant with an electrical generation capacity of approximately 270 megawatts (MW). Gilroy Energy Center LM6000 project Phase I will consist of the following equipment proposed for installation/operation at their facility:

S-3 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, 45 MW net simple-cycle, maximum heat input rating is 467.6 MMBtu/hour; abated by A-3 Oxidation Catalyst, and A-4 Selective Catalytic Reduction System.

S-4 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, 45 MW net simple-cycle, maximum heat input rating is 467.6 MMBtu/hour; abated by A-5 Oxidation Catalyst, and A-6 Selective Catalytic Reduction System.

S-5 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, 45 MW net simple-cycle, maximum heat input

rating is 467.6 MMBtu/hour; abated by A-7 Oxidation Catalyst, and A-8 Selective Catalytic Reduction System.

On April 25, 2001, Calpine submitted an Application for Certification (AFC) for Gilroy Energy Center LM6000 project Phase I to the CEC. The CEC has assigned the project Docket No. 01-EP-8.

Calpine is seeking approval to construct Phase I of the Gilroy Energy Center LM6000 project under the expedited permitting process of Section 25705 of the Public Resources Code. The Governor has issued Executive Orders that provide for a 21-day certification process for simple-cycle thermal power plants and related facilities that can be put into service by September 30, 2001.

The CEC is reviewing this project under an accelerated schedule in accordance with Executive Order D-26-01 (which requires the CEC to issue a license within 4 months of application) and D-28-01 (which directs all state agencies to: 1) expedite covered application; and 2) follow substantive requirements for environmental protection and protection of public health & safety). Pursuant to these Orders, the District is expediting this permit to the extent possible consistent with a complete review.

The normal CEC site certification process is functionally equivalent to the environmental review required under the California Environmental Quality Act (CEQA). As such, the CEC is the CEQA Lead Agency. The Governor has declared that projects covered by Executive Order D-26-01 and D-28-01, however, are emergency projects under Public Resources Code §21080(b)(4), and are thereby exempt from the requirements of CEQA.

Calpine has requested that fuel use and emissions from the three simple-cycle LM6000 proposed under Gilroy Energy Center LM6000 Phase I project be limited to the equivalent of 3,900 hours of baseload operation per turbine per year. As a result, the project does not trigger federal Prevention of Significant Deterioration (PSD) requirements. The operation has been limited to less than the PSD triggers of 40 tons/yr. on NOx and 15 tons/yr. of PM10

Emission Calculations:

Worst-Case Hourly Emission Estimates from the Turbine Vendor:

The baseload emission rates were furnished by the applicant based on BACT concentration levels, vendor guarantees and natural gas sulfur content.

Baseload Hourly Emissions Estimates, lb/hour-turbine

NOx	POC	PM10	CO	SO2
8.4	1.17	2.5	6.13	0.33

The start-up/shutdown (non-baseload) data is based on information provided by the manufacturer and submitted to the CEC for the United Golden Gate Project which uses the same make and model gas turbine. A start-up is anticipated to take an average of 60 minutes for a simple cycle turbine. S&S Energy Products, a General Electric Power Systems Business provided hourly and start-up emission estimates.

General Electric Start-up/Stop Emissions, lb-turbine/hour-start/stop

NOx	POC	PM10	CO	SO2
7.7	0.68	2.5	7.7	0.33

Theoretical Hourly Emission Rates based on Allowable BACT Concentration Emission Limits (at 100% load):

NOx, CO, POC, and ammonia are all limited by BACT and enforceable permit conditions to not exceed certain exhaust concentrations. BACT for SO2 and PM10 is the exclusive use of clean-burning natural gas. The exhaust concentration, in ppmv, is not specifically limited for SO2 and PM10, so the hourly emission rate will be taken to be those values provided by natural gas composition and General Electric, respectively.

NOx emissions. The applicant has requested a NOx emission limit of 5.0 ppmv, which is considered BACT for this size gas turbine. The NOx emissions from the turbine will be limited by permit condition to 5.0 ppmv, dry @ 15% O2. This concentration is converted to a mass emission factor as follows:

(5.0 ppmvd)(20.95-0)/(20.95 – 15) = 17.61 ppmv NOx, dry @ 0% O2

(17.61/1,000,000)(1 lbmol/385.3 dscf)(46.01 lb NOx (as NO2)/lbmol)(8600 dscf/MMBtu) = 0.0181 lb NO2/MMBtu

The NOx mass emission rate based on the maximum firing rate of the turbine is calculated as follows:

(0.018 lb NOx/MMBtu)(467.6 MMBtu/hr) = **8.42 lb NOx/hr**

CO emissions. The CO emissions from each turbine will be limited by permit condition to 6.0 ppmv, dry @ 15% O2. The CO mass emission rate based on the maximum firing rate of the turbine is calculated as follows based on 6.0 ppmvd @ 15% O2:

(0.0131 lb CO/MMBtu)(467.6 MMBtu/hr) = **6.13 lb CO/hr**

The POC emission from the turbine will be limited by permit condition to 2.0 ppmv, dry @ 15% O2. The POC mass emission rate based on the maximum firing rate of the turbine is calculated as follows based on 2.0 ppmvd @ 15% O2:

(0.0025 lb POC/MMBtu)(467.6 MMBtu/hr) = **1.17 lb POC/hr**

Ammonia emissions. The ammonia (NH3) mass emission rate from the turbine will be limited by permit condition to 10.0 ppmv, dry @ 15% O2. The NH3 mass emission rate based on the maximum firing rate of the turbine is calculated as follows based on 10.0 ppmv @ 15% O2:

(0.0133 lb NH3/MMBtu)(467.6 MMBtu/hr) = **6.22 lb NH3/hr**

Maximum Daily Emissions, lb/day:

Maximum daily emissions are estimated based on 24 hours of worst-case emission rates. The worst-case daily emission rate is either: a day, which includes a startup/shutdown, with the balance of the daily operations based on 100% load (33.8 F ambient temperature) or 100% load for 24 hours. The baseload hourly emission estimates are based on allowable BACT concentration emission limits at 100% load. The start/stop hourly emission estimates are based on the emission estimates provided by the turbine vendor. These values are for one turbine.

NOx = (7.7 lb/hr-start/stop)(1 start) + (8.4 lb/hr-baseload)(23 hr) = 200.9 lb/day NOx

or (8.4 lb/hr-baseload)(24 hr) = 201.6 lb/day NOx

CO = (7.7 lb/hr-start/stop)(1 start) + (6.13 lb/hr-baseload)(23 hr) = 148.7 lb/day CO

POC = (0.68 lb/hr-start/stop)(1 start) + (1.17 lb/hr-baseload)(23 hr) = 27.6 lb/day POC

or (1.17 lb/hr-baseload)(24 hr) = 28.1 lb/day POC

PM10 = (2.5 lb/hr-start/stop)(1 start) + (2.5 lb/hr-baseload)(23 hr) = 60.0 lb/day PM10

SO2 = (0.33 lb/hr-start/stop)(1 start) + (0.33 lb/hr-baseload)(23 hr) = 7.9 lb/day SO2

Annual Emissions, tons/year:

Per the application, the applicant is requesting emission limits based on nominal operation limited to 24 hours/day and fuel use equivalent to approximately 3900 hours/year of baseload operation per turbine. The NOx emissions have been capped at 39.5 tons/yr. This will be accomplished by the actual emissions being lower than the BACT level of 5.0 ppm or reducing

the operating time to less than the assumed 3900 hrs/yr. The accumulated emission totals will be monitored by the Continuous Emission Monitor (CEM) system.

NOx emissions calculation:
[(8.4 lb/hr)(3900 hours/yr.)(3 gas turbines)](1 ton/2000 lb) = 49.1 tons/yr. NO2

limited by permit condition to 39.5 tons/yr. NO2

POC emissions calculation:
[(1.17 lb/hr)(3900 hours/yr.)(3 gas turbines)](1 ton/2000 lb) = 6.9 tons/yr. POC

PM10 emissions calculation:
[(2.5 lb/hr)(3900 hours/yr.)(3 gas turbines)](1 ton/2000 lb) = 14.7 tons/yr. PM10

CO emissions calculation:
[(6.13 lb/hr)(3900 hours/yr.)(3 gas turbines)](1 ton/2000 lb) = 36.0 tons/yr. CO

SO2 emissions calculation:
[(0.33 lb/hr)(3900 hours/yr.)(3 gas turbines)](1 ton/2000 lb) = 1.9 tons/yr. SO2

Permitted Maximum Annual Emissions, tons/yr.

NO2	POC	PM10	CO	SO2
39.5	6.9	14.7	36.0	1.9

Compliance Determination:

The following section summarizes the applicable District Rules and Regulations and describes how the proposed project will comply with those requirements.

A. Regulation 2, Rule 2; New Source Review

The primary requirements of New Source Review that apply to the proposed Gilroy Energy Center LM6000 project facility are Section 2-2-301; "Best Available Control Technology Requirement", Section 2-2-302; "Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides, NSR", and Section 2-2-303; "Offset Requirement, PM_{10} and Sulfur Dioxide, NSR" and Section 2-2-304, "PSD Requirements".

Best Available Control Technology (BACT) Determinations

The following section includes BACT determinations by pollutant for the permitted sources of the proposed project.

Air Pollution Control Strategies and Equipment

The proposed facility includes sources that trigger the Best Available Control Technology (BACT) requirement of New Source Review (District Regulation 2, Rule 2, NSR) for emissions of nitrogen oxides (NO_x), carbon monoxide (CO), precursor organic compounds (POC), sulfur dioxide (SO_2), and particulate matter of less than 10 microns in diameter (PM_{10}).

The NOx, CO and oxygen concentrations will be monitored continuously using a continuous emissions monitor (CEM). Therefore, emission concentrations of NOx and CO will be limited to parts per million (ppm) emissions concentrations in the permit conditions. A pound per million Btu emission factor for POC is proposed to limit further limits the emissions.

Nitrogen Oxides (NO_x)

District BACT Guideline 89.1.2, dated 8/28/00, specifies BACT1 (technologically feasible/cost-effective) for NO_x for a simple-cycle gas turbine with a power rating <50 MW as NO_x emissions < 5.0 ppmvd @ 15% O_2, achieved through the use of Selective Catalytic Reduction (SCR) with ammonia injection in conjunction with combustion modifications and water injection. BACT2 (achieved in practice) is $\leq$ 5.0 ppmvd @15% O2.

Two relatively new technologies are capable of controlling NOx emissions from a gas turbine to 2 ppmv or below. These are SCONOx, manufactured by Goal Line Environmental Technologies, and XONON, manufactured by Catalytica, Inc. The District has reviewed these technologies to determine if they are appropriate for this application. It appears that while both of these innovative approaches to emission control show great promise for the future, and may currently be appropriate for other types of projects, neither option can be considered technologically feasible for the type and operating conditions of equipment to be installed for this project.

SCONOx is the more established of the two technologies. This system uses a potassium carbonate coated catalyst to remove both NOx and CO, without the use a reagent such as ammonia. There is one system in commercial operation on a gas turbine of comparable size to this project.

However, SCONOx is installed on a combined-cycle electrical generation system, which typically has outlet temperatures below 400 degrees F. This project will be a simple-cycle system, with outlet temperatures exceeding 850 degrees F. We are not aware of any SCONOx applications on turbines with outlet temperatures that high, and Goal Line's Technical Paper describing the system lists acceptable temperature range as 300 to 700 degrees F. Based on

this information, we do not believe that SCONOx represents a technologically feasible control option for this project.

XONON, developed by Catalytica, Inc., is another promising new technology for NOx emissions control. This technology uses a flameless catalyst located inside the combustion chamber itself, which allows for the combustion reaction to proceed at a lower temperature than in conventional turbines, thus preventing the formation of NOx.

At the present time, the commercial availability of this technology is extremely limited. To date, we are aware of only one application, a 1.5 MW turbine in Santa Clara, California. There is no information available regarding the operation of such a system on a turbine the size of the one to be installed at this project, which is over 30 times larger. Based on this information, we do not believe that XONON represents a technologically feasible control option for this project.

Water will be injected into the turbine combustor to reduce NOx emissions at the combustor exhaust. Aqueous ammonia is injected into the SCR catalyst to control exiting stack emissions to less than 5.0 ppmvd NOx @ 15% O2. The ammonia slip will be limited by permit condition to 10.0 ppmv. This seems acceptable because the applicant is proposing to reduce NOx emissions and the averaging times below those levels required by current District BACT, so some allowance for ammonia slip is appropriate. The applicant has requested a NOx limit of 5.0 ppmv. Since SCR, controlling NOx emissions to 5.0 ppmv corrected to 15% oxygen, represents a control technology that is technologically feasible, cost-effective, and achieved in practice in a wide variety of applications, it represents BACT for the project. This will comply with BACT.

Carbon Monoxide (CO)

District BACT Guideline 89.1.2, dated 8/28/00, specifies BACT (achieved in practice) for CO for a gas turbine with a power rating $\leq$ 50 MW as CO emissions $\leq$ 10.0 ppmvd @ 15% O_2, achieved through the use of Selective Catalytic Reduction (SCR) with ammonia injection in conjunction with combustion modifications.

The CO emissions from the combustion turbine will be reduced through the use of an oxidation catalyst to less than 6.0 ppmvd CO @ 15% O2. CO emissions are also minimized through the use of best combustion practices and "clean burning" natural gas. This will comply with BACT.

Precursor Organic Compounds (POCs)

District BACT Guideline 89.1.2, dated 8/28/00, specifies BACT (achieved in practice) for POC for a gas turbine with a power rating <50 MW as POC emissions $\leq$ 2.0 ppmvd @ 15% O_2, achieved through the use of Selective Catalytic Reduction (SCR) with ammonia injection in conjunction with combustion modifications.

Because CEMs for organic compounds only measure carbon (as C_1), it is not possible to determine non-methane/ethane hydrocarbon concentrations on a real-time basis. As a result, a continuous emission concentration limitation as BACT for POC is not feasible. Therefore, BACT for POC is deemed to be a mass emission rate limitation to be verified by annual source testing. The POC emissions from the combustion turbine will be reduced to less than 2.0 ppmvd through the use of an oxidation catalyst. POC emissions are also minimized through the use of best combustion practices and "clean burning" natural gas.

Sulfur Dioxide (SO_2)

District BACT Guideline 89.1.2, dated 8/28/00, specifies BACT (achieved in practice) for SO_2 for a gas turbine with a rated heat input $\geq$ 2.0 MW and < 50 MW as the exclusive use of clean-burning natural gas. The proposed turbines will utilize natural gas exclusively, which will result in minimal SO_2 emissions. The gas turbines will utilize natural gas exclusively to minimize SO_2 emissions. Because the emission rate of SO_2 depends on the sulfur content of the fuel burned and is not dependent upon the burner type or other combustion characteristics, the use of natural gas will result in the lowest possible emission of SO_2.

Particulate Matter (PM_{10})

District BACT Guideline 89.1.2, dated 8/28/00, specifies BACT (achieved in practice) for PM_{10} for a gas turbine with a rated heat input $\geq$ 2.0 MW and < 50 MW as the exclusive use of clean-burning natural gas. The proposed turbines will utilize natural gas exclusively, which will result in minimal nitrate and sulfate particulate formation. The gas turbines will utilize natural gas exclusively to minimize PM_{10} emissions. PM_{10} emissions are minimized through the use of best combustion practices and "clean burning" natural gas.

Emission Offsets

General Requirements

Pursuant to Regulation 2-2-302, federally-enforceable emission reduction credits are required for NOx and POC increases at a ratio of 1.15 and 1.00, respectively. The applicant has demonstrated that it possesses sufficient valid offsets for this project, and will submit certificates before the authority to construct is issued. The applicant has requested that emission reduction credit submittal be postponed in order to allow it to seek local sources of offsets.

Permitted Maximum Annual Emissions, tons/yr.

Pollutant	NOx	SO2	CO	POC	PM10
Potential to Emit Existing Facility (tpy)	324	3	100	40*	25*
Net Increase in Emissions LM6000 (tpy)	39.5	2.02	36	6.9	14.8
Total Facility Potential to Emit (tpy)	363.5	5	136	47	39.7
Facility Threshold (tpy)	15	100	n/a	15	100
Offsets Required (tpy)	45.4	0	n/a	6.9	0
Offsets available (tpy) Certificate Number	142.21 ERC 727			88.04 ERC 728	

*From Title V permit.

Prevention of Significant Deterioration, PSD

Pursuant to Regulation 2-2-221, a PSD air quality analysis is not required because this facility emits less than the trigger levels listed below for NOx, POC, PM10, CO and SO2. As such, the project is not a major modification of a stationary source and will not be subject to PSD review for those pollutants.

Pollutant	Trigger Level (tpy)	Project Emissions (tpy)
NOx:	40	39.5
POC:	40	6.9
PM_{10}:	15	14.7
CO:	100	36.0
SO_2:	40	2.0

Public Notice, Comment and Inspection

Because the California Energy Commission has accepted an Application for Certification for this plant, the plant is subject to the District Power Plant Regulation 2-3. Per Regulation 2-3-404, this project is required to undergo Public Notice, Comment and Public Inspection. The APCO shall within 10 days of the notification of the applicant, cause to have published in at least one newspaper of general circulation within the District, a prominent notice stating the preliminary

decision of the APCO, the location of the information available, and inviting written public comment for a 30 day period.

CEQA Analysis

Per District Regulation 2-1-310, except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from California Environmental Quality Act (CEQA) pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA. For this project, the Lead Agency under CEQA is the California Energy Commission (CEC). However, under the present emergency orders this project is exempt from CEQA.

Gilroy Energy Center filed the original Application for Certification (AFC) for Phase I of this project on April 26, 2001. The CEC staff has now begun its independent data discovery and analysis phases. These phases will include a number of public workshops and hearings. Under the terms of present emergency orders, the CEC's review process is expected to be completed within three weeks.

Aqueous ammonia will be used as the reagent in the SCR system. Deliveries will be made by tanker trucks and stored in an aboveground storage tank. Gilroy Energy Center LM6000 project Phase I will use existing connections at the adjacent cogeneration power plant for natural gas supply, transmission interconnection, and water supply. Gilroy Energy Center LM6000 project Phase I will also make use of existing potable water and sanitary water systems.

Environmental Impacts of Ammonia Slip from the Use of SCR:

Gas turbines using SCR have typically been limited to 10 ppmv, however single-digit levels for ammonia slip have been proposed and guaranteed by some control equipment vendors. Use of aqueous ammonia rather than anhydrous ammonia reduces the overall risk to the public. Ammonia for SCR is stored in a tank. An accidental release from storage could pose problems to communities surrounding the plant. Aqueous and anhydrous ammonia are the two types of ammonia typically used for ammonia injection. The aqueous form is safer and is proposed for this project.

A health risk assessment by the District using air dispersion modeling showed an acute hazard index of 0.006 and a chronic hazard index of 0.0096 resulting from the ammonia slip emissions. In accordance with the District Toxic Risk Management Policy and currently accepted practice, a hazard index of 1.0 or above is considered significant. Therefore, the toxic impact of the ammonia slip resulting from the use of SCR is deemed to be not significant and is not a sufficient reason to eliminate SCR as a control alternative.

The ammonia emissions resulting from the use of SCR may have another environmental impact through its potential to form secondary particulate matter such as ammonium nitrate. Because of the complex nature of the chemical reactions and dynamics involved in the formation of secondary particulate, it is difficult to estimate the amount of secondary particulate matter that will be formed from the emission of a given amount of ammonia. However, it is the opinion of the Research and Modeling section of the District Planning Division, that the formation of ammonium nitrate in the Bay Area air basin is limited by the formation of nitric acid and not driven by the amount of ammonia in the atmosphere. Therefore, ammonia emissions from the proposed SCR system are not expected to contribute significantly to the formation of secondary particulate matter. This potential environmental impact is not considered adverse enough to justify the elimination of SCR as a control alternative.

A second potential environmental impact that may result from the use of SCR involves the storage and transport of ammonia. Although ammonia is toxic if swallowed or inhaled and can irritate or burn the skin, eyes, nose, or throat, it is a commonly used material that is typically handled safely and without incident. The applicant will be required to maintain a Risk Management Plan (RMP) and implement a Risk Management Program to prevent accidental releases. The RMP provides information on the hazards of the substance handled at the facility and the programs in place to prevent and respond to accidental releases. The accident prevention and emergency response requirements reflect existing safety regulations and sound industry safety codes and standards. Therefore, the potential environmental impact due to aqueous ammonia storage at this facility does not justify the elimination of SCR as a control alternative.

B. Toxic Risk Screen

Pursuant to the BAAQMD Risk Management Policy, a health risk screening must be executed to determine the potential impact on public health resulting from the worst-case emissions of toxic air contaminants (TACs) from the project. In accordance with the requirements of the BAAQMD Risk Management Policy and California Air Pollution Control Officers Association (CAPCOA) guidelines, the impact on public health due to the emission of these compounds was assessed utilizing air pollutant dispersion models.

A review of the health risk assessment submitted by the applicant for operation of a gas turbine generator peaking unit was performed by the District's Toxics Evaluation Section (see attached May 4, 2001, B. Bateman memo). The emission rates are calculated based on a total annual fuel use by the three turbines of 5,494,300 MMBtu (5,376 MMscf/yr.) and are presented in the May 5, 2001, memo. The ammonia emissions shown are based upon a worst-case ammonia emission concentration of 10 ppmvd @ 15% O_2 due to ammonia slip from the SCR systems. The rest of the pollutant emissions are calculated using the maximum emission factors from the

California Air Toxics Emission Factor (CATEF) database available from the California Air Resources Board (CARB 1996) for gas turbines with COC/SCR controls.

The results of the District's risk screen are as follows:

Cancer Risk	Chronic Hazard Index	Acute Hazard Index
less than one in a million	0.16	0.51

These levels of risk are not considered significant. Thus, in accordance with the BAAQMD Risk Management Policy, the screen passes. Therefore, the facility is deemed to be in compliance with the BAAQMD Risk Management Policy.

C. Other Applicable District Rules and Regulations

Regulation 1, Section 301: Public Nuisance

None of the project's proposed sources of air contaminants are expected to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public with respect to any impacts resulting from the emission of air contaminants regulated by the District. In part, the air quality impact analysis is designed to insure that the proposed facility will comply with this Regulation.

Regulation 2, Rule 1, Sections 301 and 302:
Authority to Construct and Permit to Operate

Pursuant to Regulation 2-1-301 and 2-1-302, the applicant has submitted an application to the District to obtain an Authority to Construct and Permit to Operate for the proposed S-3, 4 and 5 Gas Turbine.

Regulation 2, Rule 2, Section 307:
Compliance Certification

Pursuant to BAAQMD Regulation 2-2-307, prior to the District issuing the Authority to Construct Permit the applicant is required to submit a certified list of California facilities owned or operated by the applicant and must further certify that these facilities are either in compliance or are on a Schedule of Compliance with all applicable state and federal emissions limits and standards. The applicant has submitted this certification to the District.

Regulation 2, Rule 3: Power Plants

Pursuant to Regulation 2-3-101, this rule applies to power plants for which the California Energy Commission (CEC) has accepted a Notice of Initiation or Application for Certification. On April 26, 2001, Calpine submitted an Application for Certification (AFC) for Gilroy Energy Center LM6000 project Phase I to the CEC. The CEC has assigned the project Docket No. 01-EP-8.

These procedural requirements in Regulation 2, Rule 3 will be met before issuance.

Regulation 2, Rule 6: Major Facility Review

Title V of the 1990 Clean Air Act Amendments (CAAA) required states to implement and administer a source-wide operating permit program consistent with the provisions of Title 40, Code of Federal Regulations (CFR), Part 70. The BAAQMD has been delegated authority to administer the Title V program through Rule 2-6.

Pursuant to 40 CFR 72, the new units may not be operated before either the acid rain permit is issued, or 24 months after the acid rain permit application is submitted whichever is first. Because the acid rain permit will be issued as a modification of the Title V permit, the new units may not be operated before the modified Title V permit is issued. The application to modify the existing Title V permit has not yet been submitted as of May 8, 2001.

Regulation 2, Rule 7: Acid Rain

Per the definition of Phase II Acid Rain Facility in Regulation 2-6-217.1, this facility is a Phase II Acid Rain Facility. This project will be subject to the requirements of Title IV of the federal Clean Air Act. The requirements of the Acid Rain Program are outlined in 40 CFR Part 72, 73, and 75. The specifications for the type and operation of continuous emission monitors (CEMs) for pollutants that contribute to the formation of acid rain are given in 40 CFR Part 75.

District Regulation 2, Rule 7 incorporates by reference the provisions of 40 CFR Part 72 and administers the program in concert with the Title V Operating Permits Program (Rule 2-6).

The facility must obtain an Acid Rain Permit from the BAAQMD prior to the date on which the unit commences operation. The District has been delegated authority to issue Acid Rain permits.

The project will be subject to the following general requirements under the acid rain program:

- Duty to apply for a modification to the Acid Rain Permit.
- Compliance with SO2 and NOx emission limits.
- Duty to obtain required SO2 allowances.

- Duty to install, operate and certify Continuous Emission Monitoring Systems (CEMs) to demonstrate compliance with the acid rain requirements.

The applicant will secure the required SO2 allowances and will perform the required emission monitoring. Monitoring plans will be submitted as required by EPA rules.

Regulation 6: Particulate Matter and Visible Emissions

Through the use of dry low-NO_x burner technology and proper combustion practices, the combustion of natural gas at the proposed gas turbine is not expected to result in visible emissions. Specifically, the facility's combustion sources are expected to comply with Regulation 6, including sections 301 (Ringelmann No. 1 Limitation), 302 (Opacity Limitation) with visible emissions not to exceed 20% opacity, and 310 (Particulate Weight Limitation) with particulate matter emissions of less than 0.15 grains per dry standard cubic foot of exhaust gas volume.

Regulation 7: Odorous Substances

Regulation 7-302 prohibits the discharge of odorous substances, which remain odorous beyond the facility property line after dilution with four parts odor-free air. Regulation 7-302 limits ammonia emissions to 5000 ppm. Because the ammonia emissions from the proposed SCR system will each be limited by permit condition to 10 ppmvd @ 15% O_2, the facility is expected to comply with the requirements of Regulation 7.

Regulation 8: Organic Compounds

This facility is exempt from Regulation 8, Rule 2, "Miscellaneous Operations" per 8-2-110 since natural gas will be fired exclusively at the project.

Regulation 9: Inorganic Gaseous Pollutants

<u>Regulation 9, Rule 1, Sulfur Dioxide</u>

This regulation establishes emission limits for sulfur dioxide from all sources and applies to the combustion sources at this facility. Section 301 (Limitations on Ground Level Concentrations) prohibits emissions which would result in ground level SO_2 concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Section 302 (General Emission Limitation) prohibits SO_2 emissions in excess of 300 ppm (dry). The gas turbine is not expected to contribute to noncompliance with ground level SO_2 concentrations and should easily comply with section 302.

<u>Regulation 9, Rule 3, Nitrogen Oxides from Heat Transfer Operations</u>

The proposed combustion gas turbine shall comply with the Regulation 9-3-303 NO_x limit of 125 ppm with nitrogen oxide emissions of 5.0 ppmvd @ 15% O_2.

Regulation 9, Rule 9, Nitrogen Oxides from Stationary Gas Turbines

Because the proposed combustion gas turbine will be limited by permit condition to NO_x emissions of 5.0 ppmvd @ 15% O_2, it is expected to comply with the Regulation 9-9-301.3 NO_x limitation of 9 ppmvd @ 15% O_2.

Regulation 9, Rule 11, Nitrogen Oxides and Carbon Monoxide from Electric Power Generating Steam Boilers

This rule does not apply because this project does not utilize a boiler.

Regulation 10: New Source Performance Standards (NSPS)

This regulation incorporates the federal NSPS.

Subpart A General Provisions provides the general framework for NSPS. Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units does not apply because this project does not utilize duct burners.

Subpart GG Standards of Performance for Stationary Gas Turbines – contains NOx and SOx emission limits, as well as monitoring and testing requirements for combustion turbines. The project emissions will be well below the applicable NOx and SO2 emissions limits. The Applicant will comply with emission and fuel monitoring requirements, and monitoring plans will be submitted, as required. The applicable requirements will be incorporated into the Title V permit.

Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

These standards are contained in 40 CFR Parts 61 and 63 and are not applicable to the proposed project.

IV Permit Conditions

Definitions:

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.

Year:	Any consecutive twelve-month period of time
Heat Input:	All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in Btu/scf.
Firing Hours:	Period of time, during which fuel is flowing to a unit, measured in fifteen-minute increments.
MM Btu:	million British thermal units
Gas Turbine Start-up Mode:	The time beginning with the introduction of continuous fuel flow to the Gas Turbine until the requirements listed in Condition 19 are met, but not to exceed 60 minutes.
Gas Turbine Shutdown Mode:	The time from non-compliance with any requirement listed in Condition 19 until termination of fuel flow to the Gas Turbine, but not to exceed 30 minutes.
Corrected Concentration:	The concentration of any pollutant (generally NO_x, CO or NH_3) corrected to a standard stack gas oxygen concentration. For an emission point (exhaust of a Gas Turbine) the standard stack gas oxygen concentration is 15% O_2 by volume on a dry basis
Commissioning Activities:	All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems.
Commissioning Period:	The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has completed performance testing, is available for commercial operation, and has initiated sales to the power exchange.
Precursor Organic Compounds (POCs):	Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate
CEC:	California Energy Commission

EQUIPMENT DESCRIPTION:

This Authority To Construct Is Issued And Is Valid For This Equipment Only While It Is In The Configuration Set Forth In The Following Description:

Installation of Three Simple-Cycle Gas Turbine Generators Consisting Of:

1. Simple Cycle Gas Turbine, General Electric, LM6000PC, Maximum Heat Input 467.6 MMBtu/hr, Nominal Electrical Output 45 MW, Natural Gas-Fired.

2. Selective Catalytic Reduction NOx Control System.

3. Ammonia Injection System.
(including the ammonia storage tank and control system)

4. Oxidation Catalyst System.

5. Continuous emission monitoring system (CEMS) designed to continuously record the measured gaseous concentrations, and calculate and continuously monitor and record the NOx and CO concentrations in ppmvd corrected to 15% oxygen on a dry basis.

PERMIT CONDITIONS:

Conditions for the Commissioning Period

1. The owner/operator of the Gilroy Energy Center shall minimize emissions of carbon monoxide and nitrogen oxides from S-3, S-4 and S-5 Gas Turbines to the maximum extent possible during the commissioning period. Conditions 1 through 11 shall only apply during the commissioning period as defined above.

2. At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the S-3, S-4 & S-5 Gas Turbine combustors shall be tuned to minimize the emissions of carbon monoxide and nitrogen oxides.

3. At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the A-4, A-6 and A-8 SCR Systems and A-3, A-5 & A-7 OC Systems shall be installed, adjusted, and operated to minimize the emissions of nitrogen oxides and carbon monoxide from S-3, S-4 & S-5 Gas Turbines.

4. Coincident with the steady-state operation of A-4, A-6 & A-8 SCR Systems and A-3, A-5 & A-7 OC Systems pursuant to condition 3 the Gas Turbines (S-3, S-4 & S-5) shall comply with the NOx and CO emission limitations specified in conditions 19.1 and 19.3.

5. The owner/operator of the Gilroy Energy Center shall submit a plan to the District Permit Services Division at least two week prior to first firing of S-3, S-4 & S-5 Gas Turbines describing the procedures to be followed during the commissioning of the turbines. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall

include, but not be limited to, the tuning of the steam or water injection or Dry-Low-NOx combustors, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NOx continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-3, S-4 & S-5) without abatement by their respective SCR Systems. Gas Turbines (S-3, S-4 & S-5) shall be fired no sooner than fourteen days after the District receives the commissioning plan.

6. During the commissioning period, the owner/operator of the Gilroy Energy Center LM6000 project shall demonstrate compliance with conditions 8 through 10 through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

   firing hours
   fuel flow rates
   stack gas nitrogen oxide emission concentrations,
   stack gas carbon monoxide emission concentrations
   stack gas oxygen concentrations.

   The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the Gas Turbines (S-3, S-4 & S-5). The owner/operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

7. The District-approved continuous monitors specified in condition 6 shall be installed, calibrated, and operational prior to first firing of the Gas Turbines (S-3, S-4 & S-5). After first firing of the turbines, the detection range of these continuous emission monitors shall be adjusted as necessary to accurately measure the resulting range of CO and NOx emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

8. The combined number of firing hours of S-3, S-4 & S-5 Gas Turbines without abatement by SCR or CO Systems shall not exceed 300 hours during the commissioning period. Such operation of S-3, S-4 & S-5 Gas Turbines without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or CO system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

9. The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM_{10}, and sulfur dioxide that are emitted by the Gas Turbines (S-3, S-4 &

S-5) during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in condition 22.

10. Combined pollutant mass emissions from the Gas Turbines (S-3, S-4 & S-5) shall not exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the start-up and shutdown of the Gas Turbines (S-3, S-4 & S-5).

NO_x (as NO_2)	1200 pounds per calendar day	168 pounds per hour
CO	900 pounds per calendar day	92 pounds per hour
POC (as CH_4)	97 pounds per calendar day	
PM_{10}	180 pounds per calendar day	
SO_2	24 pounds per calendar day	

11. Within sixty days of startup, the Owner/Operator shall conduct a District approved source test using external continuous emission monitors to determine compliance with condition 10. The source test shall determine NOx, CO, and POC emissions during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three start-up and three shutdown periods. Thirty days before the execution of the source tests, the Owner/Operator shall submit to the District a detailed source test plan designed to satisfy the requirements of this condition. The Owner/Operator shall notify the District within ten days prior to the planned source testing date. Source test results shall be submitted to the District within thirty days of the source testing date. This testing may be part of the testing required by Condition 25.

The Equipment For Which This Authority To Construct Is Issued May Be Operated Only When In Compliance With The Following Conditions:

12. Consistency with Analyses: Operation of this equipment shall be conducted in accordance with all information submitted with the application (and supplements thereof) and the analyses under which this permit is issued unless otherwise noted below.

13. Conflicts Between Conditions: In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.

14. Reimbursement of Costs: All reasonable expenses, as set forth in the District's rules or regulations, incurred by the District for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be

reimbursed by the owner/operator as required by the District's rules or regulations.

15. Access to Records and Facilities: As to any condition that requires for its effective enforcement the inspection of records or facilities by representatives of the District, the Air Resources Board (ARB), the U.S. Environmental Protection Agency (U.S. EPA), or the California Energy Commission (CEC), the owner/operator shall make such records available or provide access to such facilities upon notice from representatives of the District, ARB, U.S. EPA, or CEC. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

16. Notification of Commencement of Operation: The owner/operator shall notify the District of the date of anticipated commencement of turbine operation not less than 10 days prior to such date. Temporary operations under this permit is granted consistent with the District's rules and regulations.

17. Operations: The gas turbine, emissions controls, CEMS and associated equipment shall be properly maintained and kept in good operating condition at all times when the equipment is in operation.

18. Visible Emissions: No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity.

19. Emissions Limits:

    19.1 Oxides of nitrogen (NOx) emissions from the gas turbine shall not exceed 5 ppmvd @ 15% O2 (1-hour rolling average), except during periods of startup and shutdown as defined in this permit. The NOx emission concentration shall be verified by a District-approved continuous emission monitoring system (CEMS) and during any required source test. (basis: BACT)

    19.2 Ammonia emissions from the gas turbine shall not exceed 10 ppmvd @ 15% O2 (3-hour rolling average), except during periods of startup and shutdown as defined in this permit. The ammonia emission concentration shall be verified by the continuous recording of the ratio of the ammonia injection rate to the NOx inlet rate to the SCR control system (molar ratio). The maximum allowable NH_3/NO_x molar ratio shall be determined during any required source test, and shall not be exceeded until reestablished through another valid source test. (basis: BACT)

    19.3 Carbon monoxide (CO) emissions from the gas turbine shall not exceed 6 ppmvd @ 15 % O2 (3-hour rolling average), except during periods of startup and shutdown as defined in this permit. The CO emission concentration shall be verified by a District-approved CEMS and during any required source test. (basis: BACT)

19.4 Precursor organic compound (POC) emissions from the gas turbine shall not exceed 2 ppmvd @ 15% O2 (3-hour rolling average), except during periods of startup and shutdown as defined in this permit. The POC emission concentration shall be verified during any required source test. (basis: BACT)

19.5 Particulate matter emissions less than ten microns in diameter (PM10) from the gas turbine shall not exceed 2.5 pounds per hour, except during periods of startup and shutdown as defined in this permit. The PM10 mass emission rate shall be verified during any required source test. (basis: BACT & cumulative increase)

19.6 Oxides of sulfur emissions (SOx) from the gas turbine shall not exceed 0.33 pounds per hour, except during periods of startup and shutdown as defined in this permit. The SOx emission rate shall be verified during any required source test. (basis: BACT & cumulative increase)

20. Turbine Startup: Startup of the gas turbine shall not exceed a time period of 60 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. The startup clock begins with the turbine's initial firing and continues until the unit meets the emission concentration limits. (Basis: Cumulative increase)

21. Turbine Shutdown: Shutdown of the gas turbine shall not exceed a time period of 30 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. Shutdown begins with initiation of the turbine shutdown sequence and ends with the cessation of turbine firing. (Basis: Cumulative increase)

22. Mass Emission Limits: Total mass emissions from the three gas turbines shall not exceed the daily, and annual mass emission limits listed in Table 1 below.

Table 1 – Mass Emission Limits (Including Startups and Shutdowns)

Pollutant	Daily (lb.)	Annual (tons)
NOx (as NO_2)	201.6	39.5
POC	28.1	6.9
CO	148.7	36.0
SOx (as SO_2)	7.9	1.9
PM10	60.0	14.7

The daily and annual mass limits are on a calendar basis. Compliance shall be based on calendar average one-hour readings through the use of process monitors (e.g., fuel use meters), CEMS, and source test results; and the monitoring, recordkeeping and reporting conditions of this permit. (Basis: Cumulative increase & record keeping)

23. Operational Limits: In order to comply with the emission limits of this rule, the owner/operator shall comply with the following operational limits:

(a) The heat input to each gas turbine shall not exceed:

Hourly: 468 MMBtu/hr
Daily: 11,222 MMBtu/day

The heat input to the three gas turbines shall not exceed:

Annual: 5,494,300 MMBtu/year

(b) Only PUC Quality natural gas (General Order 58-a) shall be used to fire the gas turbine. The natural gas shall not contain total sulfur in concentrations exceeding 0.25 gr./100 scf.

(c) The owner/operator of the gas turbine shall comply with the daily and annual emission limits listed in Table 1 by keeping running totals based on CEM data. (Basis: Cumulative increase)

24. Monitoring Requirements: The owner/operator shall comply with the following monitoring requirements for each gas turbine:

(a) The gas turbine exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods.

(b) The ammonia injection system shall be equipped with an operational ammonia flowmeter and injection pressure indicator accurate to plus or minus five percent at full scale and calibrated once every twelve months.

(c) The gas turbine exhaust shall be equipped with continuously recording emissions monitor(s) for NOx, CO and O2. Continuous emissions monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during startups and shutdowns.

(d) The fuel heat input rate shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis).

(e) The total sulfur and hydrogen sulfide content of the fuel gas shall be analyzed on a quarterly basis.

(Basis: Monitoring & record keeping)

25. Source Testing/RATA: Within sixty days after startup of the gas turbines, and at a minimum on an annual basis thereafter, a relative accuracy test audit (RATA) must be performed on the CEMS in accordance with 40 CFR Part 60 Appendix B Performance Specifications and a source test shall be performed. Additional source testing may be required at the discretion of the District to address or ascertain compliance with the requirements of this permit. The written test results of the source tests shall be provided to the District within thirty days after testing. A complete test protocol shall be submitted to the District no later than 30 days prior to testing, and notification to the District at least ten days prior to the actual date of testing shall be provided so that a District observer may be present. The source test protocol shall comply with the following: measurements of NOx, CO, POC, and stack gas oxygen content shall be conducted in accordance with ARB Test Method 100; measurements of PM10 shall be conducted in accordance with ARB Test Method 5; and measurements of ammonia shall be conducted in accordance with Bay Area Air Quality Management District test method ST-1B. Alternative test methods, and source testing scope, may also be used to address the source testing requirements of the permit if approved in advance by the District. The initial and annual source tests shall include those parameters specified in the approved test protocol, and shall at a minimum include the following:

a. NOx (as NO2) – ppmvd at 15% O2 and lb/MMBtu;
b. Ammonia – ppmvd at 15% O2 (Exhaust);
c. CO – ppmvd at 15% O2 and lb/MMBtu (Exhaust);
d. POC – ppmvd at 15% O2 and lb/MMBtu (Exhaust);
e. PM10 – lb/hr (Exhaust);
f. SOx – lb/hr (Exhaust);
g. Natural gas consumption, fuel High Heating Value (HHV), and total fuel sulfur content;
h. Turbine load in megawatts;
i. Stack gas flow rate (SDCFM) calculated according to procedures in U.S. EPA Method 19.
j. Exhaust gas temperature (°F)
k. Ammonia injection rate (lb/hr or moles/hr)

(Basis: source test requirements & monitoring)

26. A written quality assurance program must be established in accordance with 40 CFR Part 75, Appendix B and 40 CFR Part 60 Appendix F. (Basis: continuous emission monitoring)

27. The owner/operator shall comply with the applicable requirements of 40 CFR Part 60 Subpart GG. (Basis: NSPS)

28. The owner/operator shall notify the District of any breakdown condition consistent with the District's breakdown regulations. (Basis: Regulation 1-208)

29. The District shall be notified in writing in a timeframe consistent with the District's breakdown regulations following the correction of any breakdown condition. The breakdown condition shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the actions taken to restore normal operations. (Basis: Regulation 1-208)

30. Recordkeeping: The owner/operator shall maintain the following records:

    (a) hourly, daily, quarterly and annual quantity of fuel used and corresponding heat input rates;
    (b) the date and time of each occurrence, duration, and type of any startup, shutdown, or malfunction along with the resulting mass emissions during such time period;
    (c) emission measurements from all source testing, RATAs and fuel analyses;
    (d) daily, quarterly and annual hours of operation;
    (e) hourly records of NOx and CO, emission concentrations and hourly ammonia injection rates and ammonia/NOx ratio.
    (f) for the continuous emissions monitoring system; performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor.
    (Basis: record keeping)

31. All records required to be maintained by this permit shall be retained by the permittee for a period of five years and shall be made readily available for District inspection upon request. (Basis: record keeping)

32. Reporting: The owner/operator shall submit to the District a written report for each calendar quarter, within 30 days of the end of the quarter, which shall include:

    (a) Daily and quarterly fuel use and corresponding heat input rates;
    (b) Daily and quarterly mass emission rates for all criteria pollutants during normal operations and during other periods (startup/shutdown, breakdowns);
    (c) Time intervals, date, and magnitude of excess emissions;

(d) Nature and cause of the excess emission, and corrective actions taken;
(e) Time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments;
(f) A negative declaration when no excess emissions occurred;
(g) Results of quarterly fuel analyses for HHV and total sulfur/hydrogen sulfide content; and

(Basis: record keeping & reporting)

33 Emission Offsets: The owner/operator shall offset the project emissions in the amount and at the ratios outlined in Table 2.

Table 2 – Emission Offsets

Pollutant	Emissions Requiring Offsets (tons/yr.)	Offset Ratio	Total ERCs Required (tons/yr.)	Source of ERCs
NOx (as NO_2)	39.5	1.15	45.4	ERC Certificate 727
POC	6.9	1.00	6.9	ERC Certificate 728

The ERC certificates must be delivered to the District ten days prior to issuance of the ATC. (Basis: Emission Offsets)

34 District Operating Permit: The owner/operator shall apply for and obtain all required operating permits from the District according to the requirements of the District's rules and regulations. (Basis: Regulations 2-2 & 2-6)

35 Title IV and Title V Permits: The applications for modification of the Title IV and Title V permits must be delivered to the District prior to first-fire of the turbines. Also the acid rain monitors (Title IV) must be certified within 90 days of first-fire. (Basis: Regulation 2-6)

V. Conclusion

The APCO has concluded that the proposed Gilroy Energy Center LM6000 Phase I power plant project, which is composed of the permitted source listed below, complies with all applicable District rules and regulations.

Pursuant to District Regulation 2-3-404, this document has fulfilled the public notice, public comment, and public inspection requirements of Regulation 2-2-406 and 2-2-407. A notice inviting written public comment was published in "The Dispatch" (the local Gilroy newspaper) on May 7, 2001. The public comment period ended on June 6, 2001. The only comments

received were from the applicant and these comments have been evaluated and incorporated if appropriate.

The District is therefore issuing a Final Determination of Compliance for this project for the following equipment:

S-3 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, nominal 45 MW simple-cycle, maximum heat input rating is 467.6 MMBtu/hour; abated by A-3 Oxidation Catalyst, and A-4 Selective Catalytic Reduction System.

S-4 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, nominal 45 MW simple-cycle, maximum heat input rating is 467.6 MMBtu/hour; abated by A-5 Oxidation Catalyst, and A-6 Selective Catalytic Reduction System.

S-5 Gas Turbine with water injection or dry low NOx burners, General Electric LM6000PC, natural gas fired, nominal 45 MW simple-cycle, maximum heat input rating is 467.6 MMBtu/hour; abated by A-7 Oxidation Catalyst, and A-8 Selective Catalytic Reduction System.

Ellen Garvey
Air Pollution Control Officer/Executive Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco CA 94109

OFFICE MEMORANDUM
MAY 4, 2001

TO: **DICK WOCASEK**

FROM: **B. BATEMAN**

SUBJECT: **RESULTS OF RISK SCREEN FOR CALPINE GILROY POWER PLANT (P/A #2686)**

As requested in your memo dated April 24, 2001, we have performed a health risk screening analysis for the above referenced permit application. The screen estimates the maximum incremental health risk resulting from a proposed project involving three gas turbines located in Gilroy.

The toxic air contaminant (TAC) emission rates were based on the maximum CATEF emission factors. The SCREEN3 dispersion model was used to estimate maximum 1-hour average off-site ambient concentrations. The analysis was refined with the use of the Schulman-Scire Building Downwash/Cavity option, which provides improved treatment of building downwash. Annual average concentrations were determined by multiplying the 1-hour averages by a factor of 0.10, which is the upper end of the range of conversion factors given in EPA modeling guidance. Health risks were calculated from predicted ambient concentrations following standard ATHS Program guidelines.

Using the maximum predicted off-site ambient TAC concentrations, the cancer risk was estimated to be 1.3 in a million based on the assumption of continuous lifetime exposure. If this figure were adjusted using appropriate non-residential exposure adjustment factors, the maximum risk would be reduced below 1.0 in a million. The maximum cancer risk at the nearest residential location is also less than 1.0 in a million. The maximum chronic hazard was 0.16 and the acute hazard index was 0.51. Because these risks are acceptable under the District's Risk Management Policy the **risk screen passes**.

Additional details of the analysis are given in the attachments. If you have any questions, please let me know.